

GENDER EQUITY

**Distribution of Females and Males
In the British Columbia
School System**

1990

• **MINISTRY OF EDUCATION** •



Province of
British Columbia

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Executive Summary

The intent of this report is to provide information on the current status of girls and women in the B.C. education system. The highlights of the findings are summarized below under two headings: students, and teachers and administrators.

Students

- ▶ There is roughly an equal number of male and female students in the public school system (51.5% male vs. 48.5% female).
- ▶ Females are consistently under-represented in mathematics and science (for example: Grade 12 geometry, 35% female; Grade 12 physics, 23% female).
- ▶ Proportionately more females graduate from Grade 12 (74.5% female vs. 66.5% male).
- ▶ Similar numbers of males and females go on to post-secondary education (for instance, 48.2% of university under-graduates are female), but female post-secondary students are under-represented in traditional "male" subject areas.
- ▶ Proportionately fewer females go on to graduate studies (39.3% female vs. 60.7% male).

Teachers and Administrators

- ▶ Females make up 59.1% of the B.C. education system's professional staff. Proportionately more males are employed full-time than are females (97.4% male vs. 77.7% female).
- ▶ In elementary and secondary schools, females represent 63.9% of teachers and 21.7% of all administrators. In secondary schools, female teachers represent 32.6% of teachers and are a minority in traditional male subjects such as math and science.
- ▶ Females represent 67.5% of the Ministry of Education employees; 88% of clerical positions and 25% of management positions are filled by women.
- ▶ Females represent approximately 18% of University faculty and are concentrated in the fields of education, arts, and human and social development.



Introduction

The 1988 Sullivan Royal Commission on Education recognized that, despite many advances women have made in improving their status, they are still largely confined to lower paying, lower status jobs. The Commission also recognized that due to the lack of appropriate curricula, textbooks and role models, the education system perpetuates gender stereotypes. The Commission concluded that the education system must take responsibility to ensure that positive steps are taken to address the gender imbalance in the education system.

To this end the Commission recommended that:

- ▶ Counselling practices be developed to ensure that female students consider a wide range of appropriate courses.
- ▶ Curriculum material be monitored with a view to eliminating gender stereotypes and including content about the contribution of women.
- ▶ Hiring practices emphasize the need for more women in management and administrative positions.
- ▶ Flexible working conditions be established to allow women to combine professional employment and child rearing.

These recommendations were reinforced in the Ministry's Policy Directions of January, 1989. The Policy Direction on gender equity was to ensure that the school system reflect the changing role of women by reviewing learning materials and hiring practices, by providing information on non-traditional career opportunities, and by monitoring and reporting data on gender issues annually.

This Policy Direction is being implemented through Working Plan #1 (1989-1999) and Working Plan #2 (1990-91), with subsequent revisions as required over the next decade. The goals of the working plans on gender equity are to:

- ▶ Achieve gender equity in curriculum and learning materials.
- ▶ Achieve equity in policies and practices in the education system.

Specifically, the plan for 1990-91 includes establishing a bursary program within the schools, establishing bridging positions within the Ministry, reviewing and developing

curriculum and learning materials to remove gender bias and to provide information about non-traditional career opportunities, reviewing teaching, hiring and promotion practices, and collecting and reporting gender-related data on the education system.

The intent of this report is to provide information on the current status of girls and women in the B.C. education system. We begin with the B.C. Public School System, comparing the enrolment, subject selection, and graduation rates of boys and girls. Then elementary and secondary schools, district and Ministry staffing are examined to determine what gender imbalances exist in staffing in these areas. This is followed by a brief review of the gender distributions of male and female students and faculty in B.C. post-secondary institutions.

II

The British Columbia Public School System

A. Public School Students

Total enrolment in the public school system was 513,533 in the 1989-1990¹ school year. This includes 165,020 students in K-Gr. 3, 265,360 students in Gr. 4-10, 72,282 students in Gr. 11-12 and 10,871 special ungraded students.

The distribution of girls and boys is fairly balanced throughout kindergarten to Gr. 12 (48.3%, 48.8% and 49.6% female in K-Gr. 3, Gr. 4-10 and Gr. 11-12, respectively.) There is an imbalance, though, in the gender distribution of special ungraded students, where girls make up 39.2% of the total.

1. Subject selection by female students

Although there is an approximately equal number of boys and girls in the school system, they are not equally distributed across subject areas. Traditionally, once girls reached secondary level they show a decreased interest in mathematics, science and computer studies. This tendency continues today.

Exhibit II-1 shows the percentage of female students enrolled in various Grade 11 and 12 mathematics courses in B.C. in 1986 and 1988. Exhibits II-2 and II-3 give enrolment figures for computer studies and science. With the exception of consumer math and biology, less than 45% of Grade 12 students enrolled in these courses are females. Females make up only 21 to 30 percent of the students enrolled in trade mathematics, physics and computer studies.

Participation has increased slightly in some areas since 1986 but the slow rate of increase does little to alleviate concerns of gender imbalance.

¹Statistics from the 1989-1990 school year are used throughout this report whenever possible. If these are not available then those from the most recently available school year are used.

EXHIBIT II-1

Percent of students who are female in B.C. high school math, 1986 vs.88

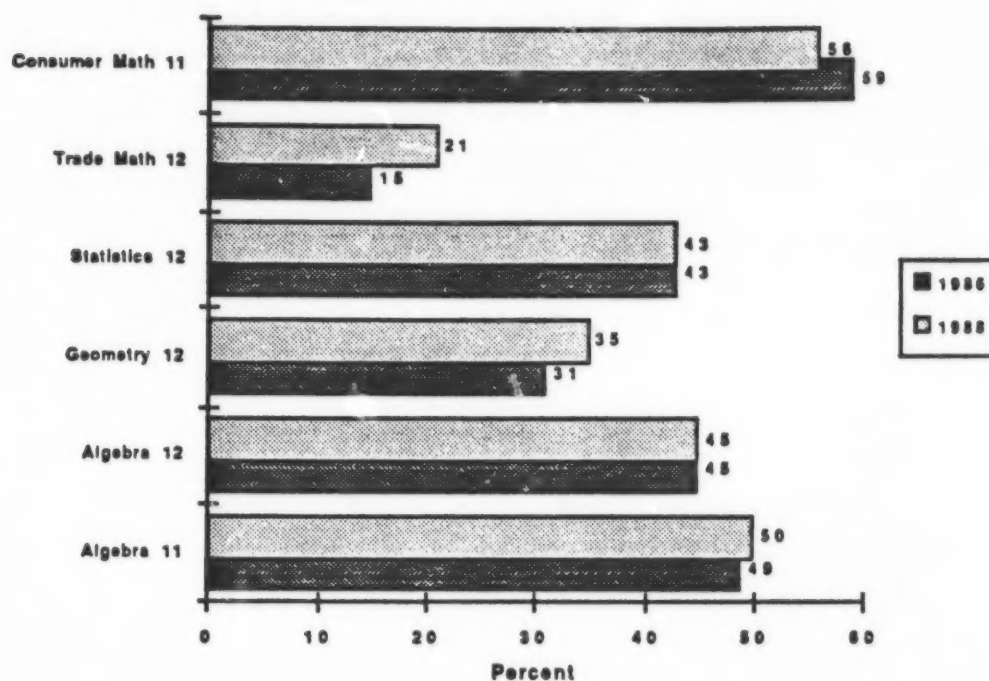
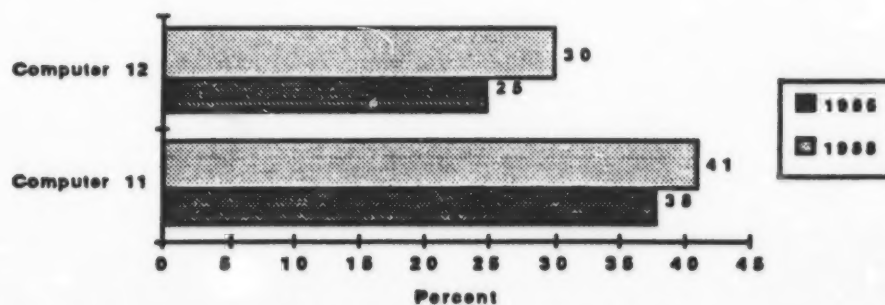


EXHIBIT II-2

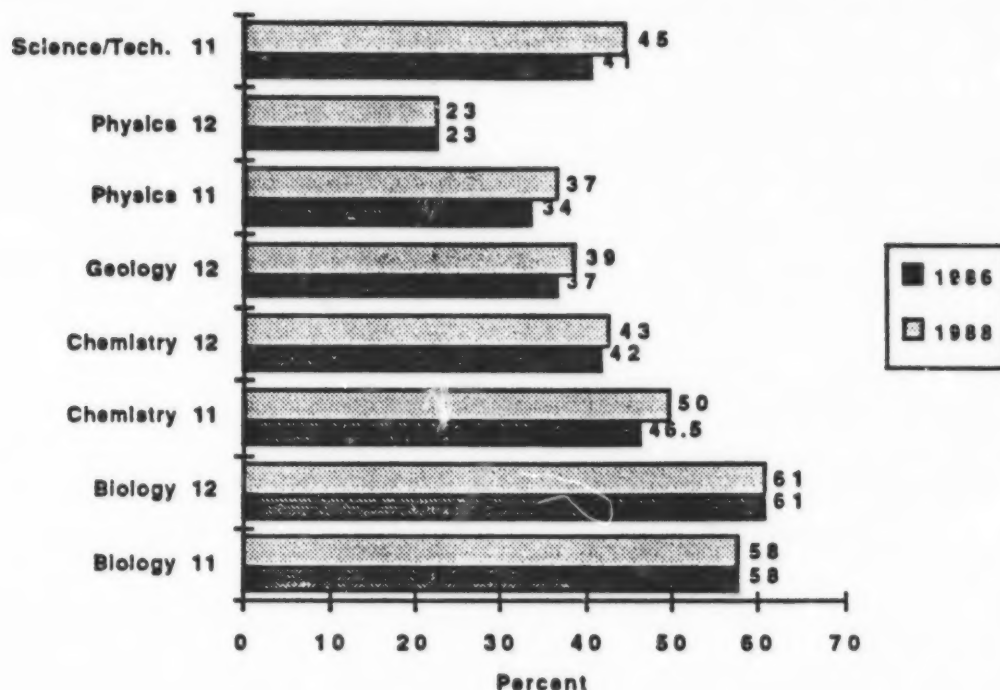
Percent of students who are female in B.C. high school computer studies, 1986 vs.1988



Source: *Science Achievement in Canada: Inter-provincial Comparisons*, Robert K. Crocker May 198.

EXHIBIT II-3

Percent of students who are female in B.C. high school science,
1986 vs.88

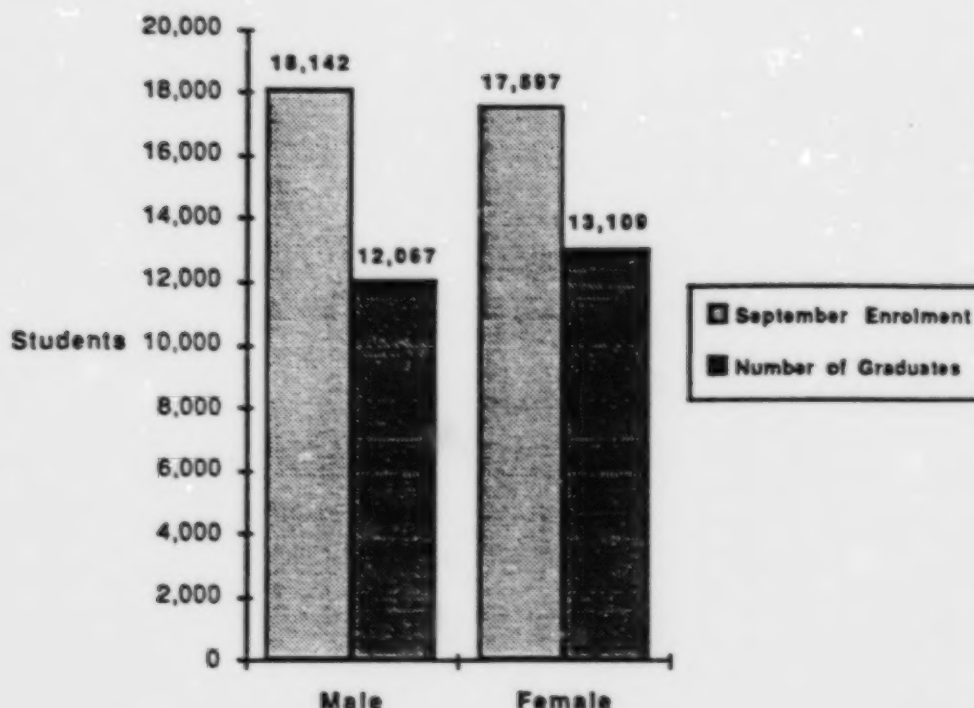


Source: *Science Achievement in Canada: Inter-provincial Comparisons*, Robert K. Crocker May 198.

2. Public school graduation rates

One indication of the success of the school system is the number of students who successfully graduate from Grade 12. In the 1988-1989 school year, more female students (74.5%) successfully completed requirements for graduating than did male students (66.5%). Exhibit II-4 portrays this difference in graph form. It contains the September 30, 1988 enrolment figures and the number of students who graduated in 1989, broken down by gender.

EXHIBIT II-4
B.C. Grade 12 graduates by gender, 1988-89



Source: Data Systems Administration Branch, Ministry of Education, B.C. Report 1554 1989

B. British Columbia Education System Professionals

In the 1989-90 school year, 31,720 professional staff were employed in the B.C. education system. Of these, 59.1% were female. However, only 77.7% of the female staff were employed full time, compared to 97.4% of male staff.

In this section we examine the gender distribution of all positions in the B.C. education system for the 1989-90 school year, including both schools and district professional staff. This will enable us to determine the types of positions or roles occupied by women and men in the education system and provide insight into the kinds of role models available to students.

As the Sullivan Royal Commission noted, there is an absence of appropriate leadership models in the school system for young women.

1. Elementary and secondary school teaching staff

Exhibit II-5 gives the staffing breakdown in all B.C. schools during 1989-90, and the percentage of females in each position. Although women hold 59.3% of all positions in elementary and secondary schools, they are under-represented in all administrative positions. This under-representation is especially dramatic in the highest positions, where only 17.7% of principals and 25.5% of vice-principals are women.

EXHIBIT II-5
School staffing by gender and position (B.C. 1989-90)

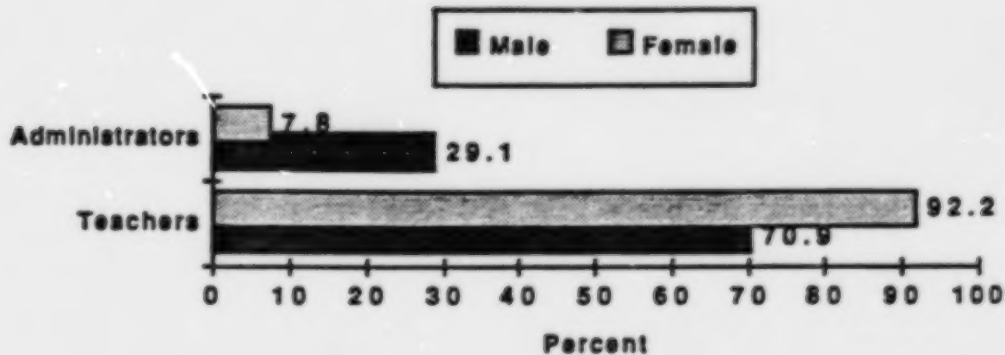
Position	Total	% Female
Regular Teacher	26,062	65.5
Principal	1,449	17.7
Vice-Principal	982	25.5
Department Head	2,216	31.7
Teacher/Administrator	483	47.0
Total	31,192	59.3

Source: Data Systems Administration Branch. Ministry of Education Report.

Another way to look at this issue is to compare the distribution of female staff with that of male staff. Exhibit II-6 contains a graph of these distributions for the 1989-90 school year. Only 7.8% of female professional staff were administrators and 92.2% were teachers, whereas 29.1% of male professional staff were administrators and 70.9% were teachers.

EXHIBIT II-6

Gender distribution of elementary and secondary school staff, 1989-90



These data compare to the picture across Canada. In 1987-1988, 3.0% of women staff in elementary and secondary schools across Canada were principals and 94.0% were teachers. Of the men staff, 10.0% were principals and 75.0% were teachers. These distributions have been virtually unchanged since 1977-1978.

2. School district staffing

Exhibit II-7 gives the professional staffing breakdown in all B.C. school districts, and the percentage of females in each position. Women hold 42.8% of all professional positions in the district offices, but are under-represented in administrative positions. The consultant, coordinator and helping teacher positions reflect the supportive roles traditionally open to women in the workforce.

EXHIBIT II-7
District staffing by gender and position (B.C. 1989-90)

Position	Total	% Female
Superintendent	92	3.3
Director of Education	125	19.2
Supervisor of Instruction	18	50.0
Teacher Consultants	75	64.0
Coordinator	117	58.1
Helping Teacher	87	62.1
Other Instructors	99	55.6
Testing and Assessment	7	28.6
Total	620	42.4

Sources: Data Systems Administration Branch, Ministry of Education Report.

3. Professional teaching standards

The current qualifications for new teachers in B.C. are a 4- or 5-year professional degree. Previously, teachers were required to have a standard teaching certificate but did not need a degree. As a consequence of this change in requirements, some teachers have degrees and some have certificates. There are also a small number of teachers that do not have either but are teaching with letters of permission.

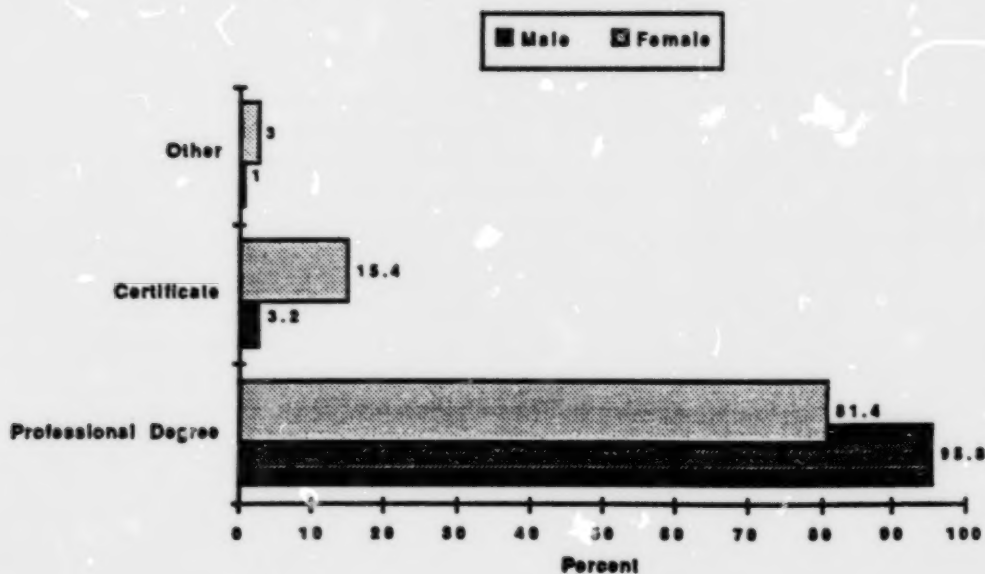
Exhibit II-8 gives a breakdown of teaching qualifications by gender for all B.C. education system staff in 1989-90. While 59.1% of education system professional staff are women, only 55.2% of those with a professional degree are women. Of the females in the teaching force, 81.4% have a professional degree, compared to 95.8% of male teachers (see Exhibit II-9). In other words, 18.6% of female teachers do not have a degree, compared to only 4.2% of male teachers.

EXHIBIT II-8
Qualifications of B.C. education system staff, 1989-90

Qualifications	Total	% Female
Professional Degree	27,673	55.2
Standard Teaching Certificate	3,299	87.3
Other	693	81.8

¹The totals are less than the total number of staff since not all reported.

EXHIBIT II-9
Distribution of teaching qualifications of male and female B.C. education system staff in 1989/90



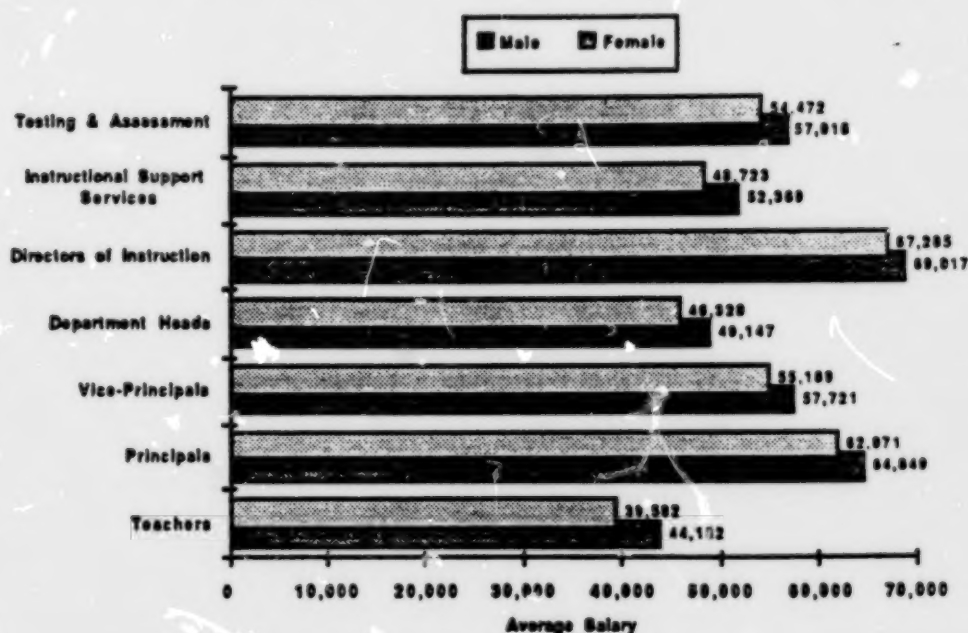
Females represent a large portion of those holding non-professional qualifications, suggesting both systemic barriers to training and implications for career options and financial benefits.

4. Salary levels of male and female B.C. education system staff

Exhibit II-10 give the average salary levels of males and females in the B.C. education system in 1989-90. Theoretically, salaries should be the same for males and females in the same position, with the same qualifications and experience. However, the net impact of systemic barriers to training and career opportunities is reflected in the lower average salaries of female staff.

EXHIBIT II-10

Average salary levels for professional staff in the B.C. Education system, 1989/90



5. Secondary teachers' subject assignment

Secondary female teachers (32.6%) are a minority in a setting where female students represent 49% of the students. This imbalance is even greater with the consideration that at the secondary levels women are clustered at the lower grades and that almost 13% of their ranks are working part-time.

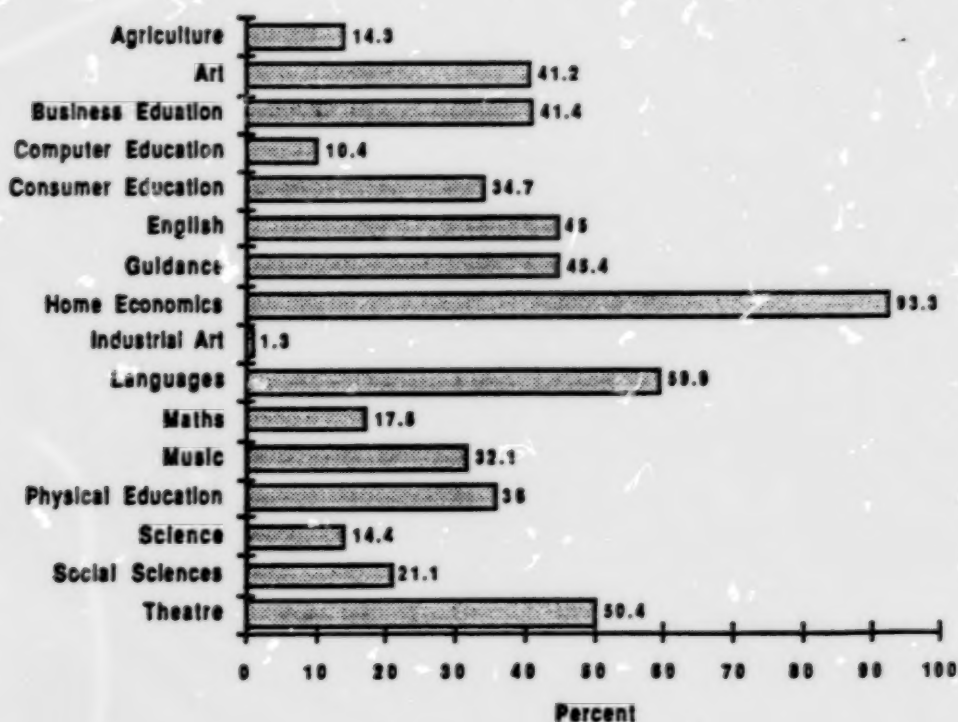
Ministry of Education data indicates that 4,599 females were teaching at the secondary level in 1988-89. The subject assignments of these teachers are shown in Exhibit II-10. It is clear from this graph that women are not evenly distributed across subject

areas. Female teachers are a small minority in several key areas: computer education (10.4%), mathematics (17.5%), science (14.4%), social studies (21.1%).

Male and female segregation in such teaching areas as agriculture, science, mathematics, computer education, home economics and industrial arts continues to reflect traditional roles and perpetuate stereotyping.

EXHIBIT II-11

Percentage of secondary school teachers who are females, assigned to each subject (B.C., 1989-90)



Source: Data Systems Communications, Ministry of Education Report 2067-1988-89.

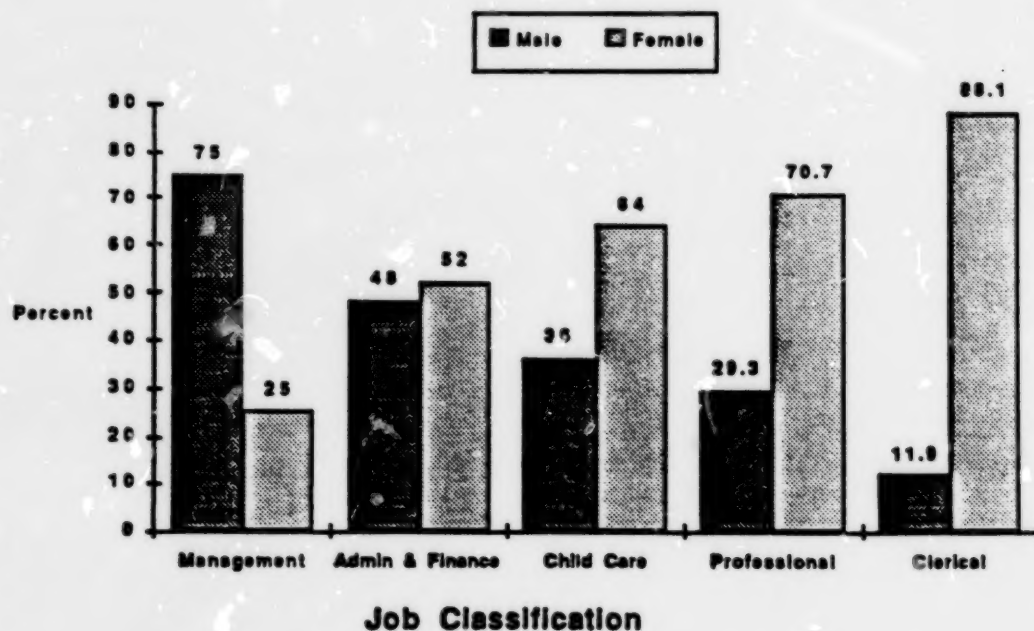
C. British Columbia Ministry of Education

Within the Ministry, females represent 67.5% of the workforce and hold 88.1% of clerical positions (see Exhibit II-11). In contrast, men comprise 32.5% of the workforce and hold 75% of the management positions.

Although females occupy 70.7% of the professional classifications, these positions represent helping/consulting roles traditionally accessible to women, and do not include supervision or management responsibilities.

EXHIBIT II-12

Gender distribution by job classification, Ministry of Education, 1989



III

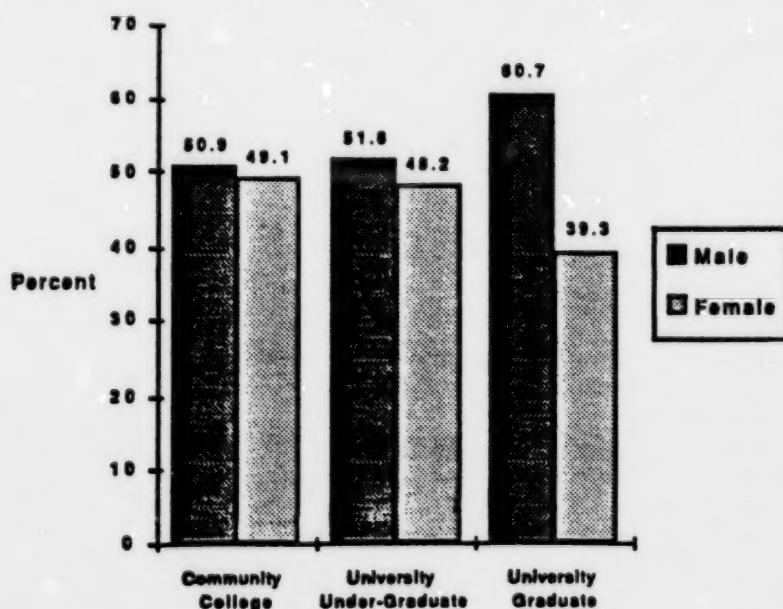
British Columbia Post Secondary Education

As indicated in the previous chapter, a higher percentage of female students graduate from high school than do male students. In this chapter we explore what happens to those high school graduates who continue formal education.

Exhibit III-1 gives the percentage of male and female students who were in community colleges, and in university under-graduate and graduate programs in B.C. in 1987-1988. There is a fairly even balance of community college students and university under-graduates. However, 60.7% of graduate students are male—a substantial departure from the male—female mix shown at the community college and under-graduate levels.

EXHIBIT III-1

Percentage of male and female students enrolled in post-secondary schools in B.C. during 1987-88



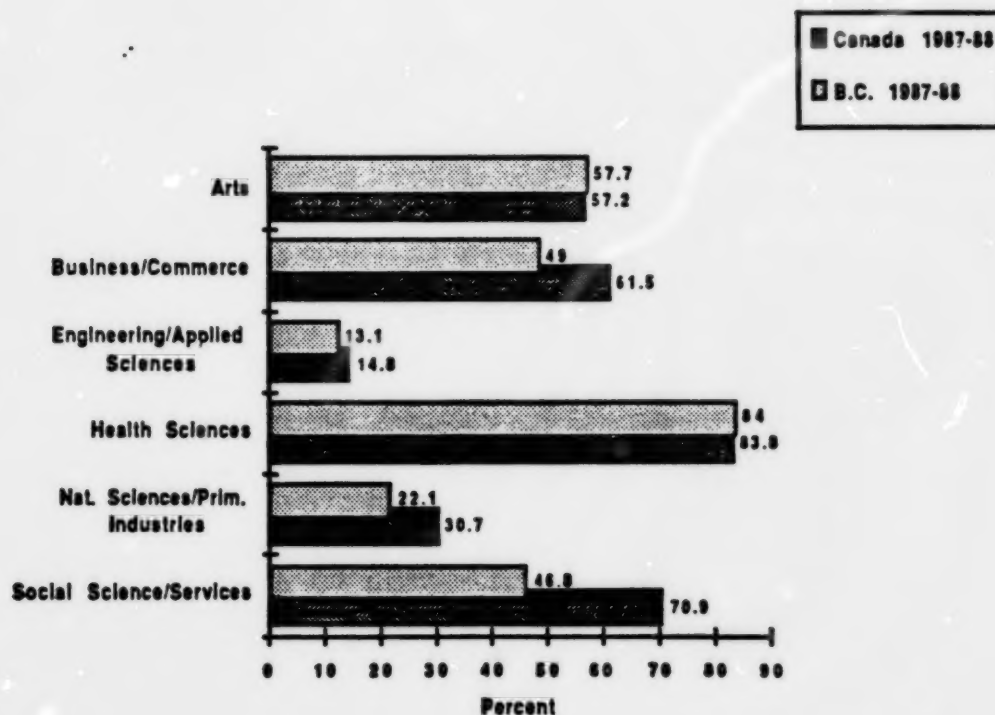
Source: Statistics Canada, Education in Canada Vol.81-220-229.

A. Community College Enrolment

The percentage of female students enrolled in each field in community colleges in B.C. and in Canada as a whole is displayed in Exhibit III-2. The B.C. enrolment picture is similar to the national picture, although B.C. falls behind the national average in some fields. Statistics Canada reports that B.C. female enrolments in business/commerce (49.0%), natural sciences (22.1%) and social sciences (46.8%), lag behind the national averages; the largest difference is found in the social sciences/services field.

EXHIBIT III-2

Community college full-time female enrolment in Canada and B.C., 1987-88



Source: Statistics Canada, Education in Canada, Catalogue 81-229.

B. Under-Graduate University Enrolment

The percentage of female students enrolled in each field during 1987-88 in universities in B.C. and in Canada as a whole is displayed in Exhibit III-3. As with community college enrolments, B.C. enrolment is similar to the national average.

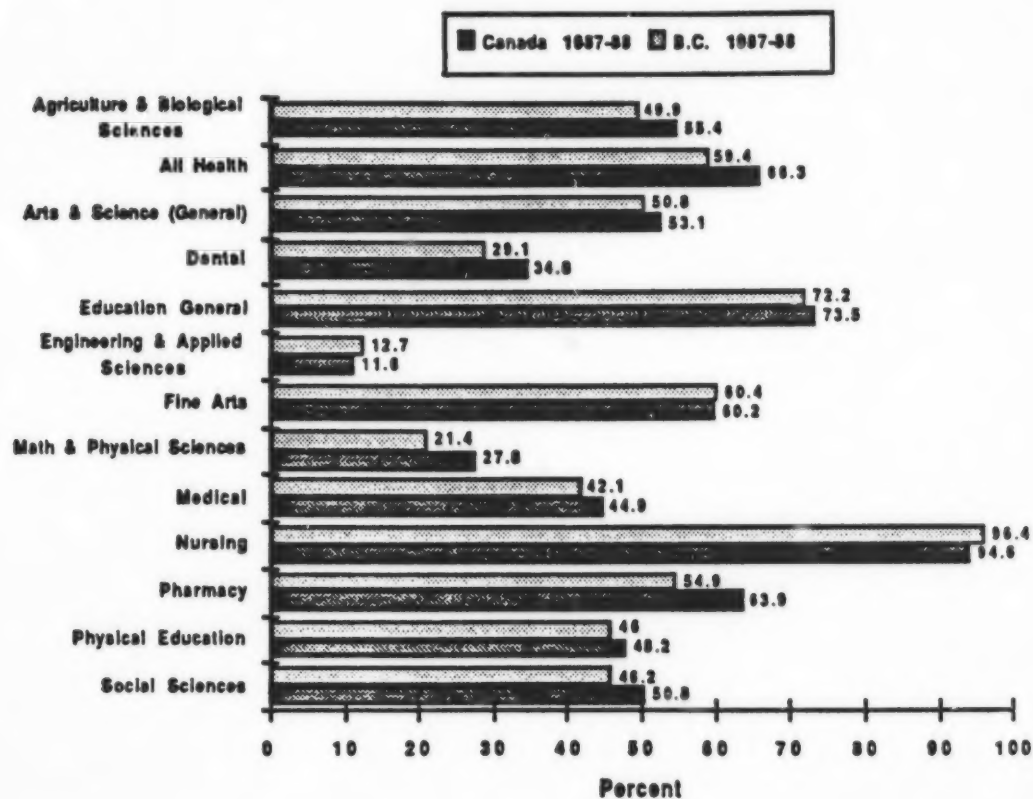
There are some notable differences between male and female enrolment patterns. Female enrolment is substantially higher than male enrolment in nursing (96.4%), education (63.5%), and fine arts (60.4%). In contrast, female enrolment is exceptionally low in both math/sciences (21.4%) and engineering/applied sciences (12.7%).

C. Graduate University Enrolment in Education

Exhibit III-4 portrays the percentage of male and female students enrolled in the Education Faculty, Graduate Studies, in British Columbia during 1987-88. Clearly, women are entering graduate studies in this field in significant numbers. An impressive 57.8% of Master of Education students are female, while 48% of doctoral students in education are female.

EXHIBIT III-3

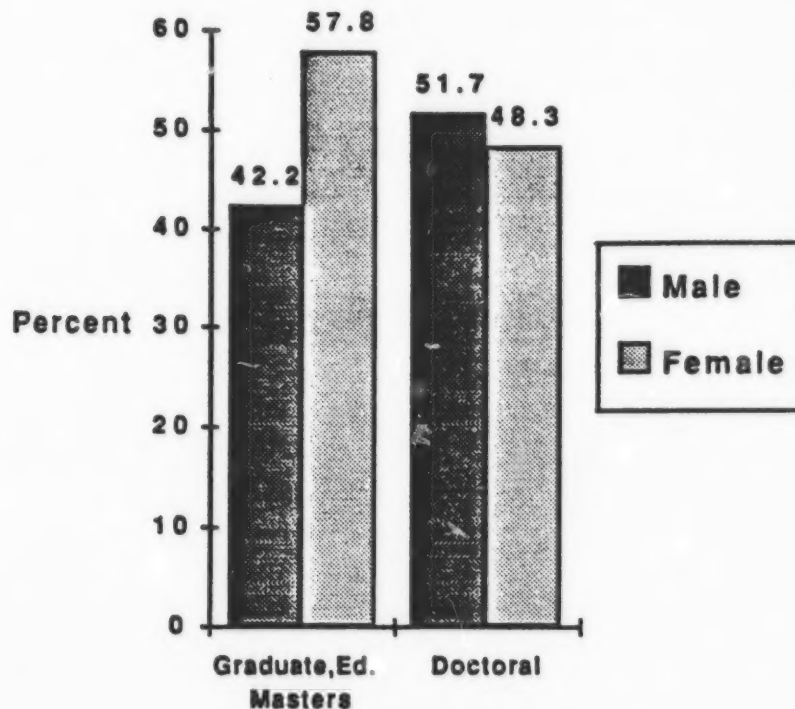
Percentage of under-graduates enrolled in each subject area who are female, in Canada and B.C., 1987-88



Source: Statistics Canada, *Education in Canada* Vol .81-220, 81-229.

EXHIBIT III-4

Percentage of male and female students in graduate studies in education, B.C., 1987-88



Source: Statistics Canada, *Education in Canada*, Vol. 81-229.

D. Community College and University Faculty

Although large numbers of women attend post-secondary institutions of learning, they are still taught by a predominantly male faculty. Women made up 29.2% of the 1920 full-time faculty teaching in community colleges in B.C. during 1987-88. At the university level, women made up only 17.7% of the 3065 full-time faculty in B.C. universities during the same year (Statistics Canada, 1989, Report 81-229). This reflects the national situation, where women hold 18% of all faculty positions in Canadian universities (reported by Cordua-Von Specht, March 1990).

Here, as elsewhere in the system, females are over-represented in the traditional areas of education human and social development and nursing; under-represented in administrative

roles and mathematics and sciences. For instance, at University of British Columbia during 1988-89 women made up only 5.6% of full-time faculty in graduate studies, only 7% in science, and 9.4% in dentistry. There were no full-time women faculty in forestry. On the other hand, 28.8% of education faculty and 21.3% of arts faculty were women (reported in UBC Factbook, 6th edition, 1989). The picture is similar at both the University of Victoria and Simon Fraser University.

Female faculty tend to be clustered in untenured and part-time positions suggesting again systemic barriers to training and advancement and perpetuating the absence of role models for female students.



IV

Concluding Remarks

Current enrolment figures indicate that approximately equal numbers of boys and girls enter the elementary and post secondary school systems. Despite this initial gender balance, there are a number of gender inequalities in the B.C. education system.

Subject participation is one of the most obvious examples of gender imbalance in the education system. Both at the secondary and post-graduate levels, females are under-represented in the traditionally male dominated courses such as mathematics and sciences. The fact that female students are less likely to take math and science courses has obvious consequences for their futures by limiting the opportunities available to them once they leave school.

Sex role stereotypes are transmitted both directly and indirectly to students and help shape their attitudes towards education and their future aspirations. One source of influence on students is the education system itself. This system perpetuates sex role stereotypes through gender imbalances in staffing and subject assignment. Women tend to teach in the traditional "female" areas, such as education, arts, languages and nursing. Girls and young women do not have role models to support their participation in leadership roles and in traditional male fields such as science and engineering.

There is some evidence in the literature that the supportive and cooperative leaderships models that women can bring to administration may be particularly effective in school settings (Fishel & Portker, 1975, 1977; Frasher & Frasher, 1979). The small percentage of women in school administration indicates that the system is not using its female employees to the best advantage.

As we enter the 1990s and begin implementing the Sullivan Royal Commission on Education there is a wider acceptance of the concept of equality between women and men. More women continue on to post-secondary education, the majority of women participate for most of their adult lives in the work force, and there are more women visible in political structures. However the vast majority of women still cluster in low paying, stereotypical "helping" roles. Their roles within organizations rarely rise above middle-management and wages remain consistently less than two-thirds of those of working men.

The school system continues to reflect and perpetuate traditional roles for girls and women. Although females make up at least half of the student and teaching populations, they are channeled into traditional fields and are strikingly under-represented in school administration.

In response to the Sullivan Royal Commission the following Mission Statement was formulated:

The purpose of the British Columbia school system is to enable learners to develop their individual potential and to acquire the knowledge, skills, and attitudes needed to contribute to a healthy society and a prosperous and sustainable economy.

The current gender imbalance in the school system suggests that the full potential of individuals is not being realized and that students, male and female, are not adequately prepared to participate equally in society.

Appendix

Bibliography

Appendix

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